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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GOODWIN, JEANNE M

ART UNIT PAPER NUMBER

2841

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,029

Applicant(s)

RICHARDSON ET AL.

Examiner

Jeanne-Marguerite Goodwin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 January 1942.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the a quartz crystal associated with the clock counter as a secondary time base, and a reserve power supply connected to the crystal as stated in claim 9; a quartz crystal associated with the clock counter as a time base as stated in claim 10, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

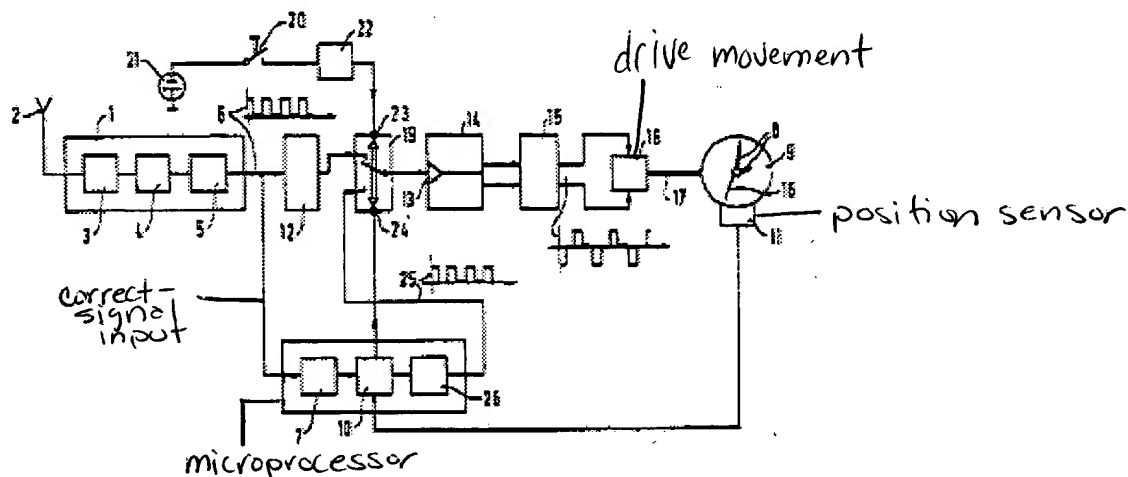
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 6, 10-13, 15-18, 21, 22-29, 30-32, 36-39, 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,650,344 to Allgaier et al. [hereinafter Allgaier].

Allgaier discloses a radio-controlled timepiece including an analog clock movement

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comprising a microprocessor including a time keeping circuit (26), a correction-signal input connected to the microprocessor (see figure below), hands position indicator/sensor (11) connected to the microprocessor; and a drive movement (16 and 17) connected to the microprocessor and associated with the position sensor (11) via the hands (8 and 18). Inherently, the time keeping circuit uses an interval clock or counter for proper operation.



Allgaier discloses all the subject matter claimed by applicant with the exception of the limitation stated in claim 6, i.e., the drive movement comprises a quartz movement motor; the limitation stated in claim 10, i.e., a quartz crystal associated with the clock counter as a time base; the limitation stated in claim 11, i.e., a signal conditioner connected between the correction-signal input and the processor; the limitation stated in claim 12, i.e., a reserve power supply connected to the processor; the reserve power supply comprises a capacitor; the limitation stated in claim 16, i.e., an options jumper connected to the processor; the limitation stated in claim 17, i.e., a printed circuit board on which the processor, the position sensor and the drive motor are mounted; the limitation stated in claim 18, i.e., the printed circuit board comprises clock-face mounting points; the limitation stated in claim 21, i.e., a voltage regulator connected

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between the power supply and the processor; the limitation stated in claim 30, i.e., an analog clock movement comprising a quartz movement motor; the limitation stated in claim 34, i.e., a reserve power supply for the secondary time base; the limitation stated in claim 35, i.e., an idle gear; the limitation stated in claim 42, i.e., a quartz drive movement.

Official Notice is taken with respect the limitation stated in claims 6, 30 and 42, i.e., a quartz movement motor, it is well known in the art to use quartz movement motors in order to set the clock by electrical means at much higher speeds, particularly in the case of three-hand clocks. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to replace the drive movement assembly, as taught by Allgaier, with a quartz movement assembly, in order to be able to set the clock by electrical means at much higher speeds.

Official Notice is taken with respect to the quartz crystal associated with the clock counter as a time base as stated in claim 10, it is well known in the art to use a clock counter having a quartz crystal as a time base having a stable frequency standard to provide a high-frequency time base for the associated time display. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to add a quartz crystal, as claimed by applicant, to the interval clock or counter, as taught by Allgaier, in order to have a stable frequency standard to provide a high-frequency time base for the associated time display.

Official Notice is taken with respect to the signal conditioner connected between the correction-signal input and said processor as stated in claim 11, it is well known in the art to use a signal conditioner for encoding an input signal to be input into a processor which generates the required signals for the displaying of time, respectively. Therefore, it would have been obvious

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to a person having ordinary skill in the art at the time the invention was made to add a signal conditioner, as claimed by applicant, to the correction-signal input and the processor, as taught by Allgaier, in order to encode the input signal to be input into the processor which generates the required signals for the displaying of time.

Official Notice is taken with respect to the limitations stated in claims 12 and 34, i.e., a reserve power supply, it is well known in the art to use a reserve power supply for a processor as a secondary power source in case of a power failure by the primary power source. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to add the reserve power supply, as claimed by applicant, to the microprocessor assembly, as taught by Allgaier, as a secondary power source in case of a power failure by a primary power source.

Official Notice is taken with respect to the reserve power supply comprising a capacitor as stated in claim 13, the particular reserve power supply, i.e., capacitor claimed by applicant, absent any criticality, is considered nothing more than one of numerous power supply means that a person having ordinary skill in the art will find obvious to provide for the purpose of supplying back-up power in case of a power failure by the primary power supply. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a capacitor, as taught by applicant, as the reserve power supply, as one of numerous types of secondary power sources in case of a power failure by a primary power source.

Official Notice is taken with respect to the options jumper connected to the processor as stated in claim 16, it is well known in the art to use options jumper, in order for the processor to be able to make many possible configurations, e.g., test programs. Therefore, it would have been

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obvious to a person having ordinary skill in the art at the time the invention was made to add the options jumper, as claimed by applicant, to the microprocessor, as taught by Allgaier, in order for the processor to be able to make many possible configurations such as executing test programs, etc.

Official Notice is taken with respect to the printed circuit board on which the processor, the position sensor and the drive motor are mounted as stated in claim 17, it is very well known in the art to place the processor, position sensor and drive motor on a printed circuit board in order to reduce the amount of space needed for the components, in turn makes the timepiece case less bulky. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to place the microprocessor, the position sensor and the drive motor, as taught by Allgaier, on a printed circuit board, as claimed by applicant, in order to reduce the amount of space needed for the components, in turn makes the timepiece case less bulky.

Official Notice is taken with respect to the voltage regulator connected between the power supply and the processor as stated in claim 21, it is very well known in the art to use a voltage regulator in order to condition and boost power to a nominal operating voltage which supplies power to all the control circuitry. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to add a voltage regulator, as claimed by applicant, to the power supply and microprocessor assembly, as taught by Allgaier, on a printed circuit board, as claimed by applicant, in order to condition and boost power to a nominal operating voltage which supplies power to all the control circuitry.

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Official Notice is taken with respect to the idle gear as stated in claim 35, it is very well known in the art to use idle or intermittent gears in an analog timepiece in order to reduce the energy needed to be taken from the hour, minute and seconds gears enabling improvement of its performance. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to add a idle gear, as claimed by applicant, to the drive gear assembly, of Allgaier, in order to reduce the energy needed to be taken from the hour, minute and seconds gears enabling improvement of its performance.

With respect to claims 22-29 and 40-41: the method steps will be met during the normal operation of the device stated above.

4. Claims 2-5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allgaier in view of US Patent 6,298,014 to Kihara [hereinafter Kihara].

Allgaier discloses a device as stated above with regards to claims 1, 6, 10-13, 15-18, 21, 22-29, 30-32, 36-39, 42 and 43. Allgaier discloses all the subject matter claimed by applicant with the exception of the limitation stated in claim 2, i.e., the receiver being a carrier current receiver; the limitation stated in claim 3, i.e., the carrier current receiver comprises a plug-in frequency select module; the limitation stated in claim 4, i.e., the correction-signal input comprises a wired input; the limitation stated in claim 5, i.e., the correction-signal input comprises a carrier current receiver; the limitation stated in claim 7, i.e., the power supply

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comprises an alternating current as a primary time base; the limitation stated in claim 8, i.e., the clock counter uses alternating current as a primary time base;

With respect to the limitation stated in claim 2, i.e., the receiver being a carrier current receiver; the limitation stated in claim 4, i.e., the correction-signal input comprises a wired input; the limitation stated in claim 5, i.e., the correction-signal input comprises a carrier current receiver; the limitation stated in claim 7, i.e., the power supply comprises an alternating current as a primary time base; and the limitation stated in claim 8, i.e., the clock counter uses alternating current as a primary time base: Kihara teaches using a receiving circuit (9) as a carrying means to carry the standard time information generated by the time information signal generating means (2), wherein the receiving circuit (9) received signal is selected from a wireless information transmission means via radio waves, light, wire, sound, vibration, or a magnetic field or the like and a wire-type information transmission means via AC commercial power mains or wiring within a general dwelling or the like (see column 4, lines 12-28). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to replace the antenna radio receiver and correction-signal input assembly, as taught by Allgaier, with a wire-type current receiver and correction-signal input assembly, as taught by Kihara, since both are alternative types of receiving means which will provide the same function, if one is replaced with the other, of receiving and transmitting a corrected time information signal, respectively.

Official Notice is taken with respect to the carrier current receiver having a plug-in frequency select module as stated in claim 3, it is well known in the art to use tuners or frequency selectors as a way of tuning the radio signal to an appropriate frequency for proper

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operation of a device. Thus, to add a tuner or frequency selector as claimed by applicant to the device as disclosed by the combination of Allgaier and Kihara would have been obvious to a person having ordinary skill in the art at the time the invention was made as a way of tuning the radio signal to an appropriate frequency for proper operation of the device.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allgaier in view of US Patent 5,898,644 to Ganter et al. [hereafter Ganter].

Allgaier discloses a device as stated above with regards to claims 1, 6, 10-13, 15-18, 21, 22-29, 30-32, 36-39, 42 and 43. Allgaier discloses all the subject matter claimed by applicant with the exception of the limitation stated in claim 14, i.e., the position sensor comprises an optical sensor.

With respect to the limitation stated in claim 14, i.e., the position sensor comprises an optical sensor: Ganter discloses a radio-controlled timepiece comprising optical sensor assembly (39) in order to correct the time by the detection and positioning of the wheel/hand assemblies, respectively. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to replace the position sensor, as taught by Allgaier, with the optical sensor assembly, as taught by Ganter, since both are alternative types of position sensor elements which will provide the same function, if one is replaced with the other, of correcting the time by the detection and positioning of the wheel/hand assemblies, respectively.

6. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allgaier in view of US Patent 4,582,434 to Plangger et al. [hereinafter Plangger].

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Allgaier discloses a device as stated above with regards to claims 1, 6, 10-13, 15-18, 21, 22-29, 30-32, 36-39, 42 and 43. Allgaier discloses all the subject matter claimed by applicant with the exception of the limitation stated in claim 19, i.e., a system-status indicator connected to the processor; and the limitation stated in claim 20, i.e., the system-status indicator comprises at least one light emitting diode.

With respect to the limitation stated in claim 19, i.e., a system-status indicator connected to the processor; and the limitation stated in claim 20, i.e., the system-status indicator comprises at least one light emitting diode: Plangger discloses a time reference radio frequency timepiece comprising and a LED to be illuminated upon detection of a sufficiently strong signal at one of the received frequencies. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to add the LED assembly, as taught by Plangger, to the clock device, as taught by Allgaier, in order to indicate to the user when a sufficiently strong signal at one of the received frequencies has been received.

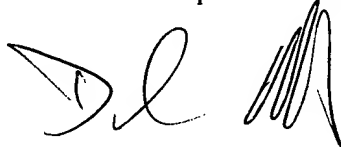
Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 disclose related devices. Singhi '050 discloses a master/slave clock system; Peng '366 and /367, Hashizume et al.'495, Haecker '474 et al., Besson et al. '263 and '993, Allgaier et al. '357 and '612 disclose optical position sensors; Damle '348 discloses a quartz crystal connected to a counter; Pikula et al. '055 discloses a radio-controlled clock movement; Breitung, II '136 discloses timepiece comprising a options

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timepiece; Kamens '692 discloses a bipole stepping motor using a quartz clock movement; and Miyazaki '895 discloses a gear train using an idle or intermittent gear structure.

8. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Examiner Jeanne-Marguerite Goodwin whose telephone number is (703) 305-0264. The examiner can normally be reached on Monday-Friday (9am-6pm), alternate Fridays off. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'DM', is positioned above the printed name of David Martin.

JMG
Jan. 12, 2004

DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800